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# TECHNICAL NOTES

LAKE STATES FOREST EXPERIMENT STATION  
UNIVERSITY FARM ST. PAUL I, MINNESOTA

No. 312

## The 1948 Forest Fire Season in the Lake States

1948 was the worst forest fire year in the Lake States since 1936. This is substantiated not only by the relative severity rating (based on burning index) which was 23.7, or 62 percent above the average of the past ten years, but by the number of fires and the area burned, which were 52 and 58 percent respectively above the 1938-47 average. Because of (1) the closure of particularly hazardous areas when burning conditions were most acute, (2) prompt action by state and federal protection agencies, and (3) an appreciable amount of good luck, no catastrophic fires developed. However, both Wisconsin and Minnesota exceeded their 10-year average burn. Michigan made the best record with only 0.09 percent of its protected area burned and an average area per fire of 8.2 acres. Minnesota suffered the most with a burn of 0.61 percent and an average fire of 74.8 acres, while on the national forests the burn amounted to 0.05 percent of the area under protection and fires averaged 9.3 acres.

The underlying cause of the severe fire season was the marked deficiency and abnormal distribution of precipitation which prevailed throughout the Lake States and eastern Canada. The spring fire season opened late (about the middle of April), became acute the last half of April, reached its peak in May, and continued well into June, normally an off month. A shorter but even more acute fire period occurred in the fall, reaching its peak in September in Michigan (August in southern lower Michigan) and October in Minnesota and Wisconsin. August was also a bad month in the southern portion of all three states. For the region as a whole, May and October were the peak months for severity of burning conditions, with June and September not far behind.

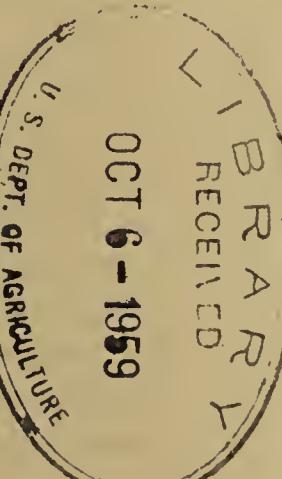
The number of fires, by causes, on 48,650,000 acres of state and private land, was as follows:

Cause	Michigan	Wisconsin	Minnesota	Total	Percent
Smoking.....	622	555	305	1,482	29.1
Railroads.....	296	337	462	1,095	21.5
Land clearing....	322	264	228	814	16.0
Miscellaneous....	230	313	140	683	13.4
Incendiary.....	48	182	28	258	5.1
Meadow burning...	...	...	245	245	4.8
Campfires.....	55	72	57	184	3.6
Lightning.....	78	86	12	176	3.5
Unknown.....	93	...	...	93	1.8
Lumbering.....	34	16	13	63	1.2
Totals.....	1,778	1,825	1,490	5,093	100.0

A summary of forest fire statistics for state and private lands is given on the back of this sheet.

Summary of  
STATE FOREST FIRE STATISTICS  
Calendar Year - 1948

OCT 6 - 1959



	Iowa	Michigan	Wisconsin	Minnesota	Lake States total	10-year average 1938-1947
Area protected - acres	15,928,000	15,653,000	18,142,000	49,723,000	48,650,000	3,360
Number of fires	1,778	1,825	1,488	5,091	5,091	94,232
Area burned - acres	14,856	23,574	111,231	149,661	263,063	263,063
Estimated damage	\$ 96,525	\$ 95,117	\$ 220,401	\$ 412,045	\$ 412,045	\$ 1,680,658
Cost: Fire prevention	\$ 1,385,256	\$ 868,774	\$ 716,304	\$ 2,974,354	\$ 2,974,354	\$ 106,828
Fire suppression	\$ 75,710	\$ 110,983	\$ 153,056	\$ 339,749	\$ 339,749	\$ 1,050,549
Total loss plus cost	\$ 1,561,491	\$ 1,074,874	\$ 1,089,761	\$ 3,726,126	\$ 3,726,126	\$ 2,050,549
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Risk of fires starting						
Number per 100,000 acres	11.2	11.7	8.2	10.2	6.9	
Risk of fires spreading						
Size of average fire (acres)	8.4	12.9	74.8	29.4	27.3	
Risk of burning						
Percent of protected area						
Destructiveness						
Average loss per acre burned	0.09	0.15	0.61	0.30	0.19	
Risk of loss						
Average loss per acre protected	\$ 0.006	\$ 0.006	\$ 0.012	\$ 0.003	\$ 0.006	
Cost of fire prevention						
Per acre protected	\$ 0.087	\$ 0.056	\$ 0.039	\$ 0.060	\$ 0.035	
Cost of fire suppression						
Per fire	\$ 42.58	\$ 60.81	\$ 102.86	\$ 66.74	\$ 51.26	
Effectiveness of fire control						
Percent of fires under 10 acres	87.4	91.6	71.0	84.1	77.8	

Note: For 1947 statistics see Technical Note No. 295.